

## EFFECT OF VARIABLES ON SOLUBLE MOLYBDENUM

EFFECT OF FINAL TITRATED ACID ON  
SOLUBLE MOLYBDENUM

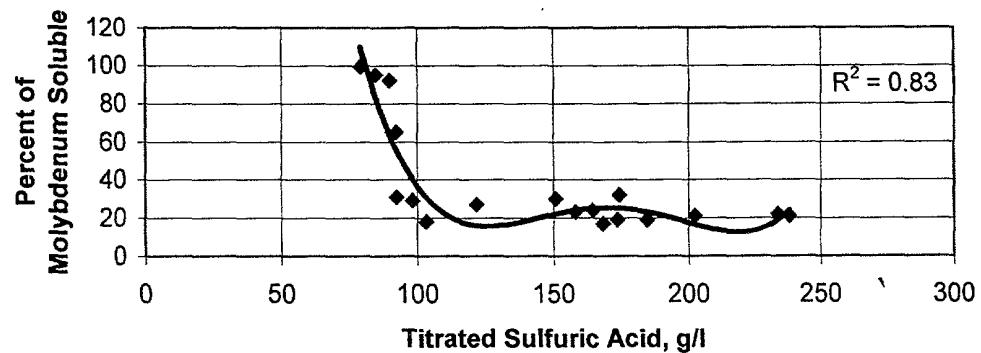


FIG. 1a

EFFECT OF SOLUBLE IRON CONCENTRATION ON  
SOLUBLE MOLYBDENUM

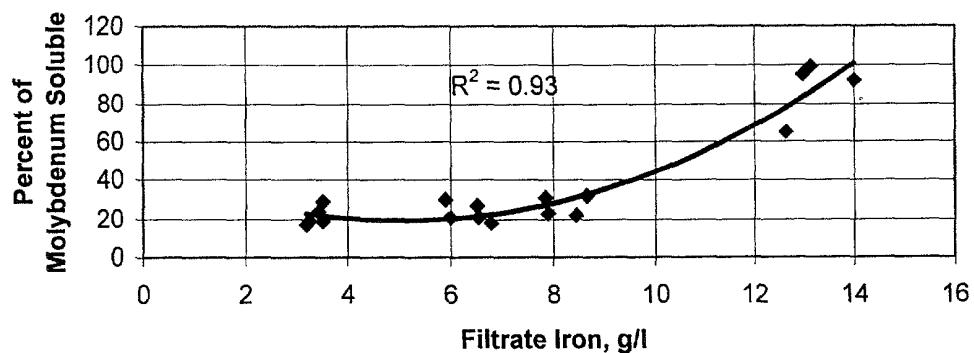


FIG. 1b

EFFECT OF EXCESS SULFURIC ACID  
CONCENTRATION ON SOLUBLE MOLYBDENUM

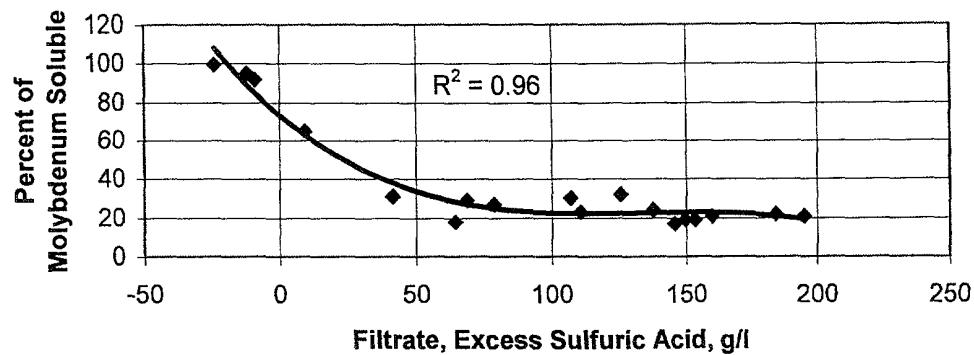


FIG. 1c

EFFECT OFF EXCESS ACID IN FILTRATE  
ON SOLUBLE MOLYBDENUM

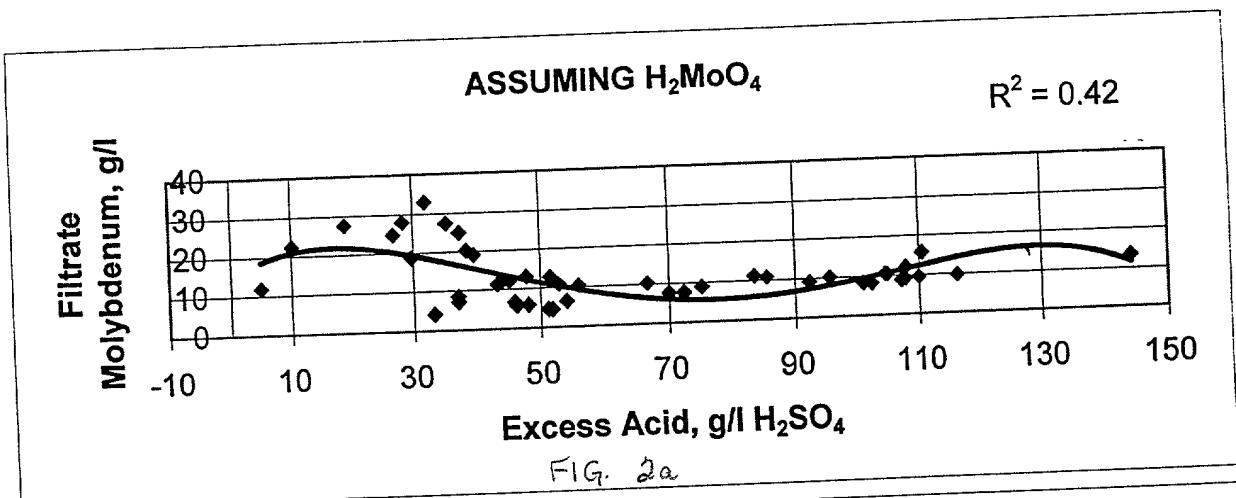


FIG. 2a

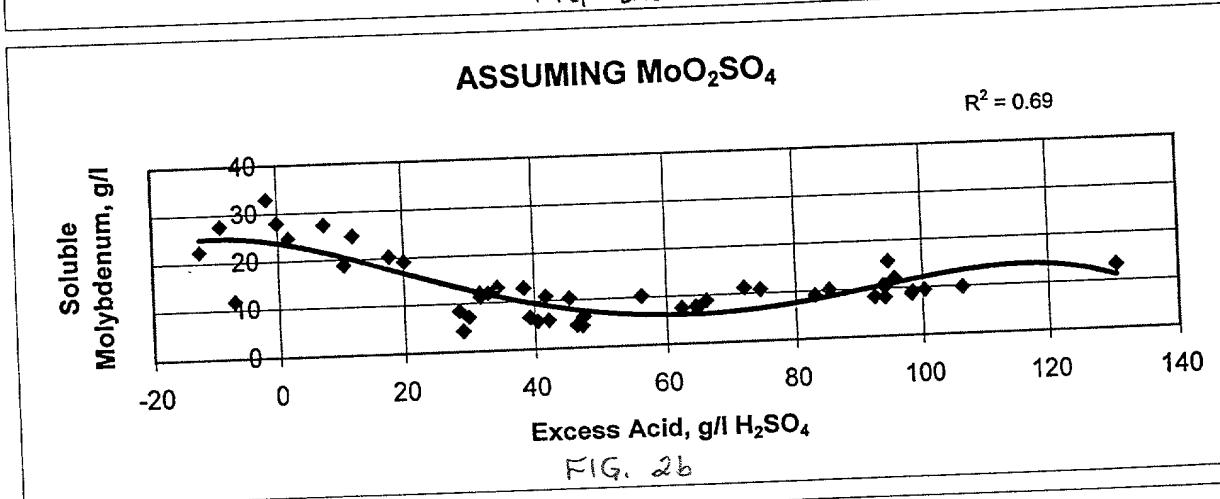


FIG. 2b

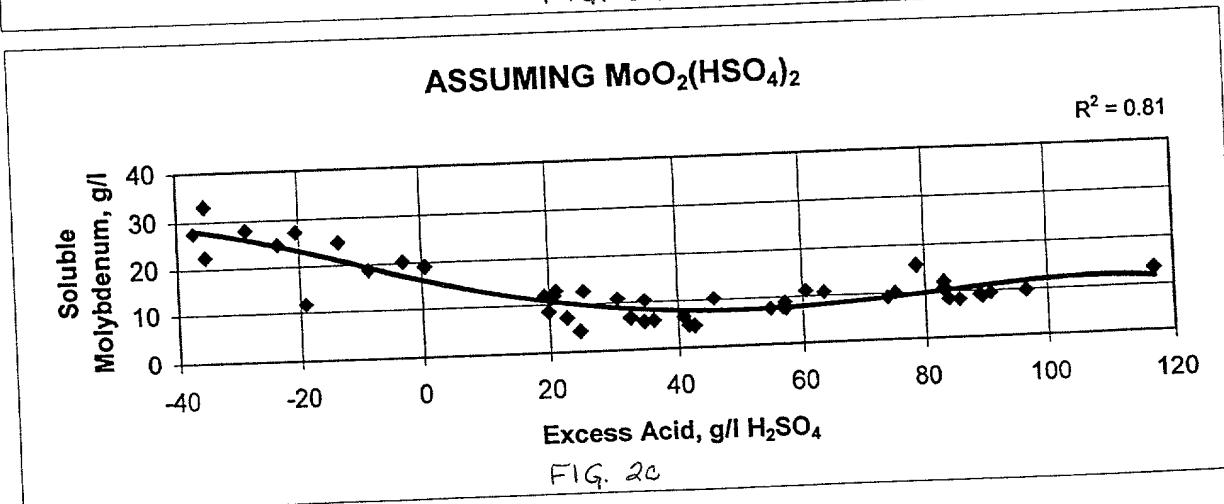


FIG. 2c

## TITRATED ACID vs EXCESS ACID

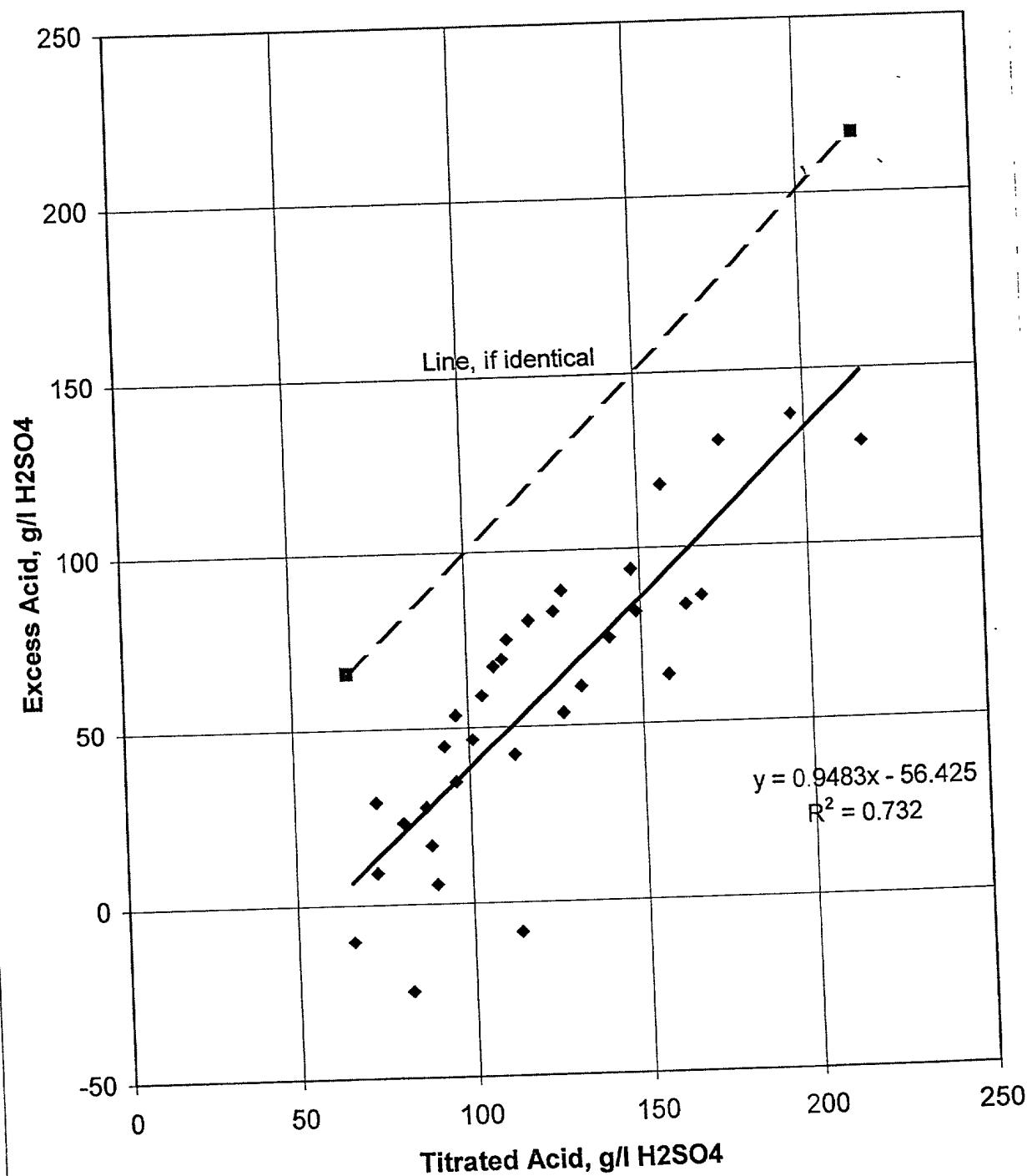


FIG. 3

## MODEL TO PREDICT SOLUBLE MOLYBDENUM AFTER PRESSURE OXIDATION OF MOLYBDENITE

Concentrate and recycle entries are moles added per liter of initial autoclave slurry.

### Concentrate

Moles Mo ("A")	0	Net acid from concentrate, mol/l ("H")	0.000
Moles Cu ("B")	0		
Moles Fe ("C")	0		

### Recycle Solution

Moles Mo ("D")	0	Excess acid, mol/l ("I")	0.00
Moles Cu ("E")	0		
Moles Fe ("F")	0		
Moles H <sub>2</sub> SO <sub>4</sub> ("G")	0		

Initial prediction, Mo g/l ("L")	22.59	#DIV/0!
If all MoS <sub>2</sub> soluble, g/l Mo ("M")	0	
Mo from MoS <sub>2</sub> precipitated, g/l ("N")	-22.59	
Percent precipitated ("O")	#DIV/0!	
Acid from addl pptn, mol/l ("P")	#DIV/0!	
Gross excess acid, mol/l ("Q")	#DIV/0!	

Final predicted Mo g/l ("R") #DIV/0!

Corrected so solubility does not exceed "M", "S" #DIV/0!

### Formulae used in calculations

"H"	= ("B" * 3) - ((C" - "B") * 0.5) + ("A" * 0.2 * 2) + ("C" * 0.3 * 3)
"I"	= ("G" + ((3 * "D") - (2 * "E") - (3 * "F")) / 2)
"J"	= "I" + "H"
"K"	= ("C" * 0.7) + "F" = 55.85
"L"	= (-10.369 * ("J" ^ 3)) + (38.992 * ("J" ^ 2)) + (-46.065 * "J") + 25.892 + ("K" / 3) - 3.3
"M"	= "96 * "A"
"N"	= "M" - "L"
"O"	= "N" / "M"
"P"	= ("O" - 0.2) * (A * 4 / 2)
"Q"	= "I" + "C" + "P"
"R"	= (-10.369 * ("Q" ^ 3)) + (38.992 * ("Q" ^ 2)) - (46.065 * "Q") + 25.892 + ("K" / 3) - 3.3
"S"	if("R" > "M", "M", "R")

Note: Functions in the equations are spreadsheet style, i.e., \* is times, / is divide, ^ to the power

FIG. 4

**PREDICTED PERCENT SOLUBLE MOLYBDENUM  
versus ACTUAL  
Final Series of Tests**

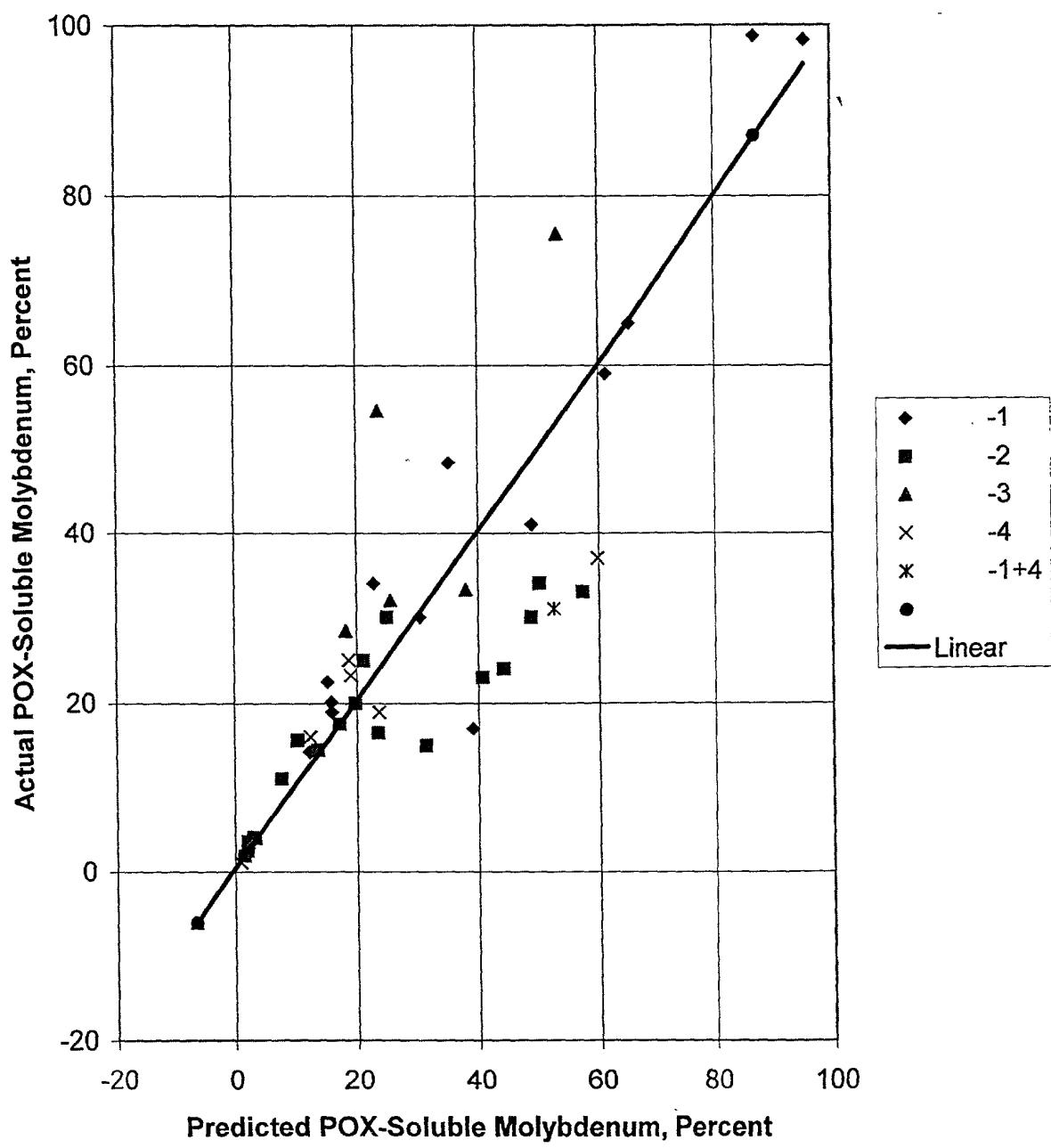


FIG. 5